

NOTES ON *AGATHYMUS* IN TEXAS, AND THE DESCRIPTION
OF A NEW SPECIES FROM MEXICO (MEGATHYMIIDÆ)

by H. A. FREEMAN

As more extensive study is made of the habits and life histories of the various known species of *Agathymus* the less we seem to know about them. Some few years ago it seemed as if all the species known fit into a definite pattern with each one using a specific *Agave* as a host plant. Since working with *Agave lecheguilla* Torr. we have found this to be untrue. Apparently many species do have very definite *Agave* host plants; however in the *lecheguilla* group it is not unusual to find two or possibly three species of *Agathymus* in the same plant. In the Hueco Mountains of Texas there occur apparently three species of *Agave*. One is a broad-leafed species in the *parryi* group, with a sordid white shade to the leaves. Another is *lecheguilla*, while in between there is either a hybrid of the two or what is called *chisosensis* Muller. In this particular area only *Agathymus maria* (B. & B.) is found in the *lecheguilla*. In the "*chisosensis*" plants I have found *A. maria* and *A. judithæ* (S. & T.), plus one that I thought at first to be a new species; however as it has characteristics of both *maria* and *judithæ* I presume it to be a hybrid of the two species. In the *parryi*-like *Agave* only *judithæ* and three specimens of this possible hybrid were found, with no *maria* ever having been observed.

During July 1949, while returning home from the Big Bend section of Texas with my family, I located a colony of *lecheguilla* growing about twenty-eight miles north of Del Rio on the highway to Sonora. I did not stop at that time to examine those plants; however if I had I would have located a new species as I have since found that they contained the recently described *Agathymus estelleæ* (S. & T.) as well as *A. maria*.

On 28 August 1958 I brought home seven specimens of *Agave lecheguilla* from 28 miles north of Del Rio, Texas, containing what I thought to be larvæ of *Agathymus maria*. I did not examine the larvæ in the field else I would have detected that they were not all *maria*. Each plant had fairly fresh frass near the base of the leaves; however no trap doors had been constructed on that date. Four of the larvæ made their doors during the first week of September, and on 24 September a female *estelleæ* emerged, the first one to be seen from the United States. On the following day two males and another female emerged. Only one *maria* came from this group of plants, a female about two weeks later.

On 4 July 1959 I brought home eleven plants from the same location and on 5 September I dug up 21 more plants; from those 32 plants 31 males and 27 females emerged from 3 September to 8 October. One plant had eight pupæ, while two others had seven in each. All specimens were *estelleæ* except three which were *maria*.

Eight miles west of Dryden, Texas, I dug up nine *lecheguilla* plants that were infested with larvæ. From these, two males and three females of *estelleæ* emerged during September (9-27), and three males of *maricæ* emerged during October (11, 13, 18).

Twelve miles south of Juno, Texas, five infested plants were carried home from which two males of *estelleæ* emerged during September (21, 23) and one female *maricæ* which emerged 18 October. One of the plants contained a female pupa of *estelleæ* which died and the other contained a female pupa of *maricæ* which was not able to get out of its pupal skin and thus eventually died without expanding.

The above-mentioned specimens of *estelleæ* differ slightly from specimens obtained from the type locality, near General Bravo, Nuevo Leon, Mexico, in that the spots on the upper surface of the secondaries are somewhat narrower and a little lighter in coloration. The spots on the upper surface of the primaries are somewhat longer and the female genitalia shows slight deviations; however not enough to indicate that it is more than individual variation.

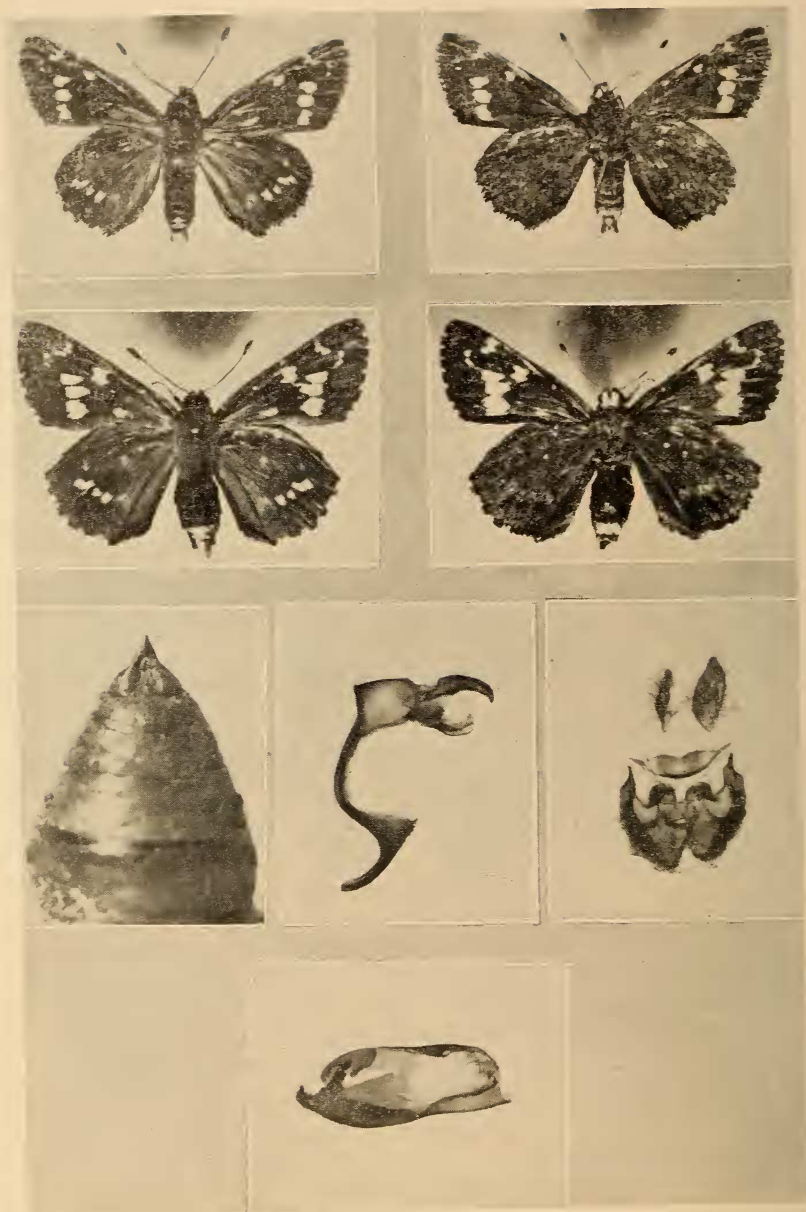
This is a new *Agathymus* record for the United States.

Several years ago I learned that there were three specimens of an *Agathymus* in the United States National Museum tentatively identified as *Megathymus smithi* Druce. Mr. WILLIAM D. FIELD of that institution, was kind enough to loan those specimens to me and when I examined them I at once saw that they were specimens of an undescribed species. In 1957 STALLINGS and TURNER made a special effort to get more specimens of this new species and some of the information contained in the following description is based on their results. It gives me great pleasure to name this species after WILLIAM D. FIELD of the United States National Museum because of his help in this particular project as well as in others.

AGATHYMUS FIELDI H. A. Freeman, new species

Male (upper side): Primaries are brownish black, with some lighter brown hairs and scales near the base. There is a spot near the end of and extending across the cell. The three subapical spots are somewhat linear and the one in interspace 6 is somewhat out of line, being nearer the apex. The two extradiscal spots are small and are situated outward from the subapical and discal spots. The discal band is composed of three separated spots, which are in line, the one in interspace 1 is somewhat broadly columnar, the one in interspace 2 is round, and the one in interspace 3 is pointed inward at the top toward the cell spot. All spots are creamy yellow in color. Fringes are alternately brownish black and creamy.

Secondaries are brownish black, sparsely overscaled with brown hairs over the basal half of the wing. There is a discal band composed of five small creamy spots, the ones in interspaces 2-5 form a straight line, while the one in interspace 6 is minute and situated above the spots in interspaces 4 and 5. The discal band is situated one-third of the way inward from the outer margin toward the base. Fringes are alternately brownish black and creamy yellow.



Agathymus fieldi. Top row: ALLOTYPE ♂, Guadalajara, Mexico, 27 Sept. 1957; 2nd row: HOLOTYPE ♀, Guadalajara, Mexico, 30 Sept. 1957 (upper surfaces left, under surfaces right). 3rd row: left, pupal cremaster; middle, ♂ uncus; right, ♀ genital plate (Paratypes, same locality as Holotype). Bottom: ♂ valva (Paratype, same locality). Photographs by DON B. STALLINGS.

Male (under side): Primaries are somewhat lighter brownish black than above, with some grayish scales near the apex. All spots reappear and are more yellowish in color. Secondaries have the ground color grayish black with an indistinct darker discal area. There are three indistinct sordid white spots below the costal area.

Thorax above is brown, somewhat lighter beneath. Abdomen is of the same coloration as the thorax. Palpi beneath are gray. Legs are brown. Antennæ are tan above, beneath sordid white, with the club black.

Size of ALLOTYPE male — primaries: base to apex 24 mm., apex to outer angle 14 mm., outer angle to base 18 mm.; secondaries: base to end of Cu_1 17 mm., costa to anal angle 20 mm.; total expanse 48 mm. (average of the paratypes 48 mm.)

Female (upper side): Primaries are brownish black, with a tan area midway between the base and spot in interspace 1. All of the spots found in the male are present and the spots in interspaces 1, 2, and 3 are larger; the one in interspace 2 is 4 mm. wide. Fringes are alternately brownish black and tan. Secondaries are brownish black, with some hairs of the same color near the base. The discal band is very similar to that found in the males except in some cases the spots are a little larger.

Female (under side): Primaries are very similar to the male except the spots are somewhat larger. Secondaries are like the male except the discal band is faintly visible. The thorax, abdomen, palpi, legs, and antennæ are the same as in the male.

Size of HOLOTYPE female — primaries: base to apex 25 mm., apex to outer angle 16 mm., outer angle to base 19.5 mm.; secondaries: base to end of Cu_1 19 mm., costa to anal angle 20 mm.; total expanse 50 mm. (average of the paratypes 50 mm.).

Type material: Described from 31 specimens. 18 males and 10 females were collected in the larval stage during August 1957 at Guadalajara, Mexico, Jalisco Highway 15, Kilometer 724, elevation 4400 feet, by STALLINGS and TURNER. The remaining two males and a female were collected at Guadalajara, Mexico, with no other data present and were borrowed from the United States National Museum for this study. The HOLOTYPE and ALLOTYPE are in the Stallings and Turner Collection, along with 12 male and four female Paratypes. One pair of Paratypes will be placed in the following collections: CHARLES L. REMINGTON, Yale University; American Museum of Natural History; and the United States National Museum, plus their original two males and one female. There are two pairs of Paratypes in the author's collection.

Superficially *A. fieldi* does not closely resemble any other known species of *Agathymus*. Actually the wing shape is a great deal like *Stallingsia maculosus* (Freeman) and the general coloration is somewhat similar. The males have the maculation on the primaries arranged much as in *A. aryxna* (Dyar), while the females resemble specimens of *A. baueri* (S. & T.) that have reduced maculation. The coloration is much darker black than either of these two species. The maculation on the upper side of the secondaries slightly resembles *A. remingtoni* (S. & T.). The male genitalia bear some slight resemblance to *A. hoffmanni* (Freeman), whereas the form of the female genital plate slightly resembles some members of the *mariae* complex. The cremaster also bears some resemblance to members of the *mariae* complex.

This particular species does not seem to fit into any of the known species complexes as it appears to be a connecting link between the *baueri* complex and the *mariae* complex. The general coloration, maculation of the second-

daries, general shape of the female genital plate, and cremaster of pupa approach those of the *remingtoni* group of the *mariae* complex. The maculation of the primaries and what is known of the life history would indicate a *baueri* complex relationship. When more information is known this species may well represent another species complex.

Host plant: *Agave tequilana* Weber.

Life history: What is known of the life history of this species was observed at the type locality by STALLINGS and TURNER on 24 August 1957, while they were collecting the larvæ. They inform me that the tan trap doors were on either side of the leaf and that the day that they were found the larvæ were cutting holes in the leaves just prior to making their trap doors. Some of the burrows were not powdered on that date while others were. A few larvae used two leaves with their burrow, while most used but a single leaf. There was no frass to be observed anywhere. The larvæ were a sordid green with pink tints. Pupæ resemble those of the *mariae* complex in general shape and size.

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CAPTURE OF *NYMPHALIS J-ALBUM* IN MARYLAND AT NIGHT

This note was stimulated by the observation of BRYANT MATHER (1959) concerning the capture of butterflies at night and by his restatement of the Editor's desire for further information in this field.

On the night of August 22, 1941, I noticed a perfect specimen of *Nymphalis j-album* Boisduval & Leconte hanging from the light fixture of an open side porch of a friend's house in a northern residential section of Baltimore city. It was easily captured because it seemed to be lethargic and I simply knocked it off into a killing jar.

This capture is of interest in that it occurred at 9 p.m. and in that it is the first recorded capture of this species in Baltimore since that of OTTO LUGGER in 1882 (January 2nd!) as reported by CLARK (1932).

References

- Mather, Bryant, 1959. *Vanessa atalanta* taken at Atlantic City at 2 A.M. *Journ. lepid. soc.* 13: 18.
Clark, Austin H., 1932. The butterflies of the District of Columbia and vicinity. *Bull. U. S. Nat. Mus.* 157: 245.

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